BEFORE THE STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL

| | |
|---|---|
| IN RE APPLICATION NO. 96-1 | ) |
| | ) |
| OLYMPIC PIPE LINE COMPANY: | ) |
| CROSS CASCADE PIPELINE PROJECT | ) |
| | ) |
| | ) |

EXHIBIT _____ (CH-RT)

REBUTTAL TESTIMONY OF CLAUDE HARSHBARGER

ISSUES: PIPELINE ROUTE , DESIGN & CONSTRUCTION
LEAK PREVENTION & DETECTION
STATE-OWNED LANDS

SPONSOR: OLYMPIC PIPE LINE COMPANY

**Q. State your name.**

A. Claude Harshbarger

**Q. Please describe the topics you will cover in your rebuttal testimony.**

A. This testimony is intended to rebut testimony submitted by various parties to these proceedings. It will address the following topics:

(1) Olympic's Application for Site Certification,

(2) The Route of the Proposed Pipeline,

(3) The Utilization of State-owned Lands for the pipeline,

(4) Leak Prevention and Detection

(5) The Construction of the Pipeline

(6) The Design of the Terminal

(7) Decommissioning of the Project.

**Olympic's Application for Site Certification**

**Q. Much of the testimony submitted by other parties to these proceedings criticizes Olympic for not providing sufficient detailed information about the proposed project and its potential environmental impacts. What is your response to that criticism?**

A. I believe that criticism is unwarranted for several reasons.

Olympic has gone to great lengths to provide EFSEC and the parties to these proceedings with sufficient information about the proposed project to allow a reasoned evaluation of the project and its potential impacts. In February 1996, Olympic filed an Application for Site Certification addressing all of the issues outlined in EFSEC's regulations. Thereafter, Olympic filed numerous technical reports expanding upon the material presented in the original Application, and in May 1998, Olympic filed a revised Application, that together with its Appendices provided thousands of pages of information concerning the project. Olympic has also spent more than three years meeting informally with parties to these proceedings to provide

additional information and to respond to their concerns. Through the stipulation-negotiation process, Olympic has provided substantial additional information, and in many cases, Olympic has either retained consultants to perform additional analysis and made that analysis available to other parties, or paid for other parties to retain consultants of their own to perform desired additional analysis. Through the informal and formal discovery process, Olympic has also made tens of thousands of pages of documentation available, responded to hundreds of questions about the project, and made witnesses, including myself, available for lengthy depositions.

Despite these efforts, some witnesses now claim that Olympic has failed to provide important information about the project. In several instances, however, the information that witnesses have requested has already been provided by Olympic. I can only assume that many of the witnesses have not read the lengthy Application, or that some are under the mistaken impression that the DEIS, which was written by EFSEC's consultant, not Olympic, contains the only available environmental information concerning the project. In other instances, witnesses have requested more detailed information or further clarification of material discussed in the Application that Olympic could have, and would have, provided upon reasonable request earlier in the process. Olympic should not be criticized for failing to provide information that was not requested earlier.

Finally, some of the criticisms now being leveled against Olympic fail to appreciate the complexities of permitting, designing and constructing a hundred million dollar pipeline project that stretches more than two hundred miles across the state. Olympic's Application for Site Certification was never intended to be a final design document. It does not contain blueprints of facilities or detailed construction plans for every foot of the pipeline route. Instead, the Application provides extensive pre-design information, intended to provide EFSEC with sufficient information to make a decision about whether to authorize construction of a pipeline within a specified corridor. Some important information – such as the spill response plan and

site specific scour analysis -- simply cannot be provided until the exact location of the pipeline is determined, which will occur after Site Certification and further investigation. Some witnesses would apparently have preferred that Olympic spend millions of dollars to prepare detailed constructions blueprints, conduct site-specific geotechical investigations, develop site-specific best management practices and prepare site-specific mitigation plans for every foot along the pipeline route. Olympic has instead provided extensive information about pipeline construction and environmental impacts, and Olympic has outlined the design investigation that it will undertake and the criteria by which it will evaluate site-specific best management practices and mitigation measures. We understand that EFSEC will want to review the results of subsequent studies and may impose performance-based requirements for design and construction activities.

**Q. Parties to this proceeding have filed testimony based upon the proposed project as it was described in the revised Application. Has Olympic made any changes in the proposed project since that time?**

A. Yes. Since Olympic first filed its Application in February 1996, Olympic has attempted to meet with Federal and State agencies as well as local jurisdictions and other interested parties to address concerns identified by those parties. Olympic has worked hard to try to negotiate stipulations with the parties to those proceedings. Whether or not Olympic has been able to enter into formal stipulations, Olympic has, in many cases, modified the project or changed the pipeline route to address concerns that have been raised. Many of those modifications and changes are reflected in the revised Application. Since the revised Application was filed last spring, however, Olympic has continued to try to negotiate stipulations, and has succeeded in reaching stipulations with some parties.

Exhibit CWH-2 is a copy of the stipulation entered into by Olympic and the Yakama Indian Nation. In this stipulation, Olympic has committed to implementing numerous mitigation measures over and above the mitigation measures outlined in Olympic's application.

Based on further analysis and discussion with other parties, Olympic has also continued its efforts to adjust the route to minimize impacts. Among the changes made are the following that concern stream crossings:

- Bear Creek. Olympic now proposes to cross by horizontal directional drilling.
- Break Creak Tributary including SR 9. Olympic now proposes to cross by horizontal directional drilling.
- Cherry Creek. Olympic now proposes to cross by horizontal directional drilling.
- Harris Creek. Olympic now proposes to cross by horizontal directional drilling.
- Tolt River. Olympic now proposes to cross both channels by horizontal directional drilling.
- Boxley Creek. Olympic now proposes to cross by installing the pipeline on the downstream side of an existing bridge.
- Carter Creek. Olympic now proposes to cross by installing the pipeline on the downstream side of an existing bridge.
- Hansen Creek. Olympic now proposes to cross by installing the pipeline on the downstream side of an existing bridge.
- Humpback Creek. Olympic now proposes to cross over a culvert along a new alignment on John Wayne Trail.
- Olallie Creek. Olympic now proposes to cross over a culvert along a new alignment on John Wayne Trail.
- Yakima River. Olympic now proposes to cross by horizontal directional drilling.

Olympic has also proposed a reroute on U.S. Forest Service lands to avoid a Late Successional Reserve area. This reroute involves moving the location where we leave Tinkhom road west about one-half mile, and rejoining the John Wayne Trail west of Humpback Creek.

## Pipeline Route

**Q. Several witnesses have suggested alternative routes for the pipeline. Before addressing those specific suggestions, can you please explain, in general, how you determined the proposed route?**

A. As outlined more fully in our Application, Olympic seeks to construct a pipeline from Western Washington to Central and Eastern Washington to respond to the needs of its customers. A team of experienced environmental consultants, engineers and land managers reviewed numerous maps and records to identify potential routes that followed existing corridors. Olympic conducted on-the-ground inspections and aerial surveillance to identify obvious environmental and construction impediments. Our environmental consultant, Dames & Moore, was also able to identify known major geological hazards and sensitive areas involving ESA or other issues. Once the list of alternatives was shortened based on these environmental considerations, outside engineering consultants and pipeline construction contractors were brought in to review the potential routes. In my initial prefiled testimony, I discussed the major alternative routes that Olympic considered, and explain why Olympic decided upon the route that is proposed in the Application.

**Q. Some witnesses have suggested that cost was the "driving factor" in route selection. Is that true?**

A. No, generally speaking, I would say cost considerations were in the back of the bus rather than up front driving. As outlined in our Application, several criteria were used to select the route. These included environmental impacts at the top of the list. We tried to utilize areas that have been impacted previously, including roads, trails and utility corridors, avoided sensitive areas where feasible, avoided high quality wetlands, stream or wildlife habitat, minimized impacts to

streams by using existing bridges, avoided impacts to existing land uses, and deferred to landowner preferences.

**Q. In their testimony, Randy Sandin (King County) and Erik Stockdale (WDOE) objected to the pipeline route through the Snoqualmie Valley. Why was that route selected?**

A. The route selection through the Snoqualmie Valley in 1995 was made after careful consideration of alternatives available with adherence to the selection criteria, including avoiding and minimizing environmental impacts. The proposed route fits that criteria because it follows the BPA corridor for the majority of the route and avoids high density populations by skirting east of the towns of Duvall and Carnation.

**Q. Mr. Sandin and Mr. Stockdale suggested three alternative routes in this area. The first alternative would follow the Snoqualmie Valley Trail at milepost 9.3 to where it connects to the Cedar Falls Trail near the City of Snoqualmie. The second alternative would follow the West Snoqualmie Valley Road. The third alternative would follow the East Snoqualmie Valley Road (SR203) to where it connects to the Cedar Falls trail near the City of Snoqualmie. What do you think of these alternative?**

A. Olympic considered the first alternative but did not select it. The Snoqualmie Valley Trail is not maintained or complete north of Duvall and would require filling wetlands, building bridges, replacing bridges, and routing through the middle of the town of Duvall and the town of Carnation. In addition, there are two high trestles over narrow, deep ravines that pose a serious risk. The second and third alternatives would requiring laying the pipeline within the road beds for up to 23 miles. Neither Olympic nor the State of Washington would want to inconvenience the general public to that extent. Laying a pipeline within a roadbed is a practice of last resort because of the numerous adjustments that would be required during the life of the pipeline as a result of road widening and repair projects, utility crossings, and bridge and culvert replacements.

**Q. Mr. Sandin also testified about a Centennial Trail alternative. Why didn't Olympic decide to follow the Centennial Trail?**

A. The use of part of the Centennial Trail is the same alternative that I addressed above involving the Snoqualmie Valley Trail.

**Q. Mr. Sandin also testified about a John Wayne Trail alternative to Olympic's preferred route along Tinkham road. Is there anything wrong with this alternative?**

A. Yes, the crossings of Hall, Mine and Hansen Creeks would be very problematic. All three streams have very deep channels that the John Wayne Trail crosses on high trestles. The Hall Creek Trestle center span was destroyed during a flood event some years ago and State Parks is just now in the process of rebuilding it. Crossing on these trestles would require difficult and potentially dangerous constructions techniques. Of even greater concern are the consequences if there were to be another bridge failure in the future. If one of the trestles failed, there would be no way to replace the pipeline crossing in a short period of time. By comparison, we could replace these other bridged crossings along the route in a relatively short period of time if we needed to do so, or utilize an alternative method of crossing such as horizontal directional drilling.

**Q. James Thompson (Parks) testified that it may be necessary to consider an alternative route that does not run through the Snoqualmie Tunnel. Is there a good alternative to the tunnel?**

A. No. We considered alternative routes, which involved routing the pipeline over the top of the tunnel, but these alternatives were all deemed inferior due to the presence of endangered species and their habitat, principally spotted owls, old growth forest and tailed frogs.

**Q. Several witnesses have testified about the Columbia River Crossing. Please explain why Olympic preferred method of crossing is a directional drill south of the Wanapum Dam.**

A. Olympic considered several alternatives for crossing the Columbia, including a conventional dredged crossing north of I-90, the I-90 bridge crossing, the Wanapum Dam, the horizontal directional drilled (HDD) crossing, and the abandoned railroad bridge several miles south of Wanapum Dam. Initially we considered whether an HDD crossing would be feasible. Test bores were drilled on either side of the river to determine soil types and depths below the river. Olympic's geotechnical consultants reviewed the data and determined HDD was practical. Several HDD contractors also reviewed the data and concurred. Once we determined that an HDD crossing was feasible, it presented many advantages. Underground crossings are easier than above-ground crossings to maintain and to protect from corrosion. HDD crossings are performed at great depths and therefore avoid scour problems that might be associated with a trenched crossing. In this case, the location of the proposed directional drill crossing would not require clearing trees or cause other environmental damage for the staging operation. In contrast, our second choice, the I-90 bridge crossing, would require disruptive construction within the shoulder of the highway approaching the bridge, would present much more difficult maintenance and inspection issues, and would be more subject to corrosion.

**Q. Joy Keniston-Longrie (DNR) testified that Olympic had not considered any alternative routes around DNR-managed lands. Is that correct?**

A. No. Olympic has reviewed, and continues to review alternatives, and to discuss possible alternatives with landowners as well as local, state and federal agencies. The routes across DNR managed lands were selected for environmental or land use reasons.

**Q. Witnesses testifying on behalf of DNR would prefer that the pipeline not be routed through Ginkgo Park. Is it possible to avoid the park?**

A. Not practically. The only practical alternative route across the Yakima Training Center (YTC) in light of on-going military operations would, in fact, involve crossing Ginkgo Park similar to the proposed route – it would only eliminate the portion north of I-90. The only way to avoid more of Ginkgo Park would be to lay the pipeline in the Hunzinger Road. However, use of Hunzinger Road would only eliminate a portin of the route through Ginkgo where Olympic has already realigned the route at the request of State Park staff to follow an already disturbed trail and fence line. Moreover, occupying Hunzinger Road for several miles would not be acceptable to the State or Olympic. Although it is not practical to avoid the Park, Olympic has been working with Parks staff to try to locate the pipeline in such a way that it avoids or minimizes impacts. Olympic has also been working with Parks staff to develop appropriate mitigation to the extent that there are impacts that cannot be avoided.

**Q. Finally, James Miller (CFE) testified about a North-South pipeline as an "alternative" to the Cross Cascade Pipeline. Why does Olympic proposed to construct a Cross-Cascade pipeline instead of another pipeline running south from Renton to Portland?**

A. A second pipeline between Renton and Portland would not provide an alternative to the proposed pipeline. The Cross Cascade Pipeline will provide a superior means of transporting refined petroleum product from Western Washington refineries to Central and Eastern Washington market areas. Olympic has expanded the Renton to Portland pipeline to its economic limits. Adding a second line is not economical and would not satisfy the requirements of our shippers. In short, it would not alleviate the problems and dangers of trucking fuel from Harbor Island, over the Cascades to Central Washington; it would still require the 300-mile river barge trip up

the Columbia; it would still require two over-water transfers of products; and it would not reduce air emission problems in the Portland area.

**State-Owned Lands**

**Q. Some witnesses have raised concerns about the State's liability in the event that a spill or accident occurred on State-owned lands. Are those liability risks significant?**

A. No. As explained elsewhere in my testimony and in the testimony of other witnesses, Olympic has incorporated design features and will implement operational practices to minimize the likelihood of a spill occurring. In the event that a spill nonetheless occurred, Olympic would take full responsibility for the cleanup and remediation.

**Q. Is Olympic willing to indemnify the State or other public entities for liability associated with the pipeline's presence on public lands?**

A. Yes. It is Olympic's general practice to indemnify landowners, public or private, who provide easements across their property. I might mention, regardless of indeminifcations in place, Olympic always responds to incidents related to our pipeline and facilities or involving our employees. However, we always want to preserve our right to seek reimbursement from responsible third-parties.

**Q. Can you describe Olympic's insurance coverage?**

A. Olympic has "all risks" property coverage of $26 million per occurrence and Excess Liability coverage of $49 million per occurrence.

**Pipeline Design and Operation: Leaks**

**Q. Several witnesses have identified additional pipeline design features or operational practices that might be used to reduce the likelihood of unintended releases or to detect any such releases that may occur. What is your reaction to that testimony in general?**

A. Well, some of the recommended features or practices are already incorporated in Olympic's proposal. Others are not, either because they are not as effective as the technologies that

Olympic plans to use, or because they have not been proven to be reliable or practical on a cross-country pipeline.

**Q. Charles Batten (CCA) testified that "OPL's design construction, testing, inspection, operations, and maintenance practices should comply with the documents, standards, and recommended practices listed in Appendix B" to his testimony in addition to 49 CFR 195. Will the Cross Cascade Pipeline comply with those standards and recommended practices?**

A. Yes. As explained in Chapter 1 of the Application, Olympic intends to comply with all relevant or applicable industry codes and practices, including many of those listed in Appendix B to his testimony. Appendix B, however, also includes many provisions that apply to water or gas pipelines only and would not apply to our project. Some are also out of date and have been replaced or withdrawn.

**Q. Let's discuss the some of the specific design features and operational practices recommended by various witnesses. First, the pipe itself. What kind of pipe will be used to construct the pipeline?**

A. The pipeline will be constructed with high strength, carbon steel pipe that is manufactured according to specifications that will comply with API 5LX-52, with a Specified Minimum Yield Strength of at least 52,000 psi.

**Q. Mr. Batten recommended that Olympic "[u]se only pipe manufactured with toughness properties consistent with the prevention of brittle fracture at or below the lowest anticipated environmental or operating temperature for the pipeline." Do you agree with this recommendation?**

A. Yes. Olympic's pipe specification is consistent with this recommendation. It goes beyond standard API-5LX requirements and will call for pipe manufactured with toughness properties such that pipe hardness will not exceed Rockwell C22.

**Q. A few witnesses have recommended that Olympic use "double-walled pipe" in certain sensitive areas. Do you agree with that recommendation.**

A. No. In thirty years of working on pipelines, I had not heard the term "double wall pipe" until barge interests began using that terminology. I am, however, familiar with the use of "cased pipe" under roads and railroads, which use the sort of pipe-within-a-pipe design proposed by some of witnesses. Although cased crossings have been used for many years, the purpose of the casing has been to accommodate external stress loads created by roads and railroads running above the pipeline, not to prevent or contain leaks. Indeed, the practice of using cased crossings has been largely discontinued in recent years because the casing has caused more problems than it has prevented.

**Q. What problems have occurred with cased pipe?**

A. There are several problems. First, the outside pipe (the casing) shields the inside pipe (the carrier pipe) from effective cathodic protection. Second, the two pipes often come into contact with each other, providing an opportunity for electric current to pass from one pipe to another, which creates corrosion at the point of contact. Third, despite efforts to seal off the end of the casing pipe, water tends to accumulate between the two pipes, creating further opportunities for corrosion damage. Fourth, over time, the pipeline tends to move and settle in the ground. Because the carrier pipe is typically more flexible than the casing, at the edge of the casing, the carrier pipe is often pushed against the casing. This contact often results in corrosion and may produce stress cracks in the carrier pipe as well.

The industry's years of experience with cased crossings have demonstrated that these problems occur and make cased (or "double walled") pipe more likely to leak than ordinary pipe. Indeed, there have been some rather spectacular accidents that have occurred as a result of the use of this cased pipe design. For example, in 1980, a 36-inch Colonial Pipeline Company line

in Virginia ruptured, releasing 8000 barrels of aviation fuel. As reported by the National Transportation Safety Board (NTSB):

> . . . the failure occurred at an area near the bottom of the pipe that had been thinned by corrosion. Apparently the corrosion resulted form groundwater leakage past the pipe-to-casing seal and into the annular space between the pipe and casing, where the shielding effect of the casing would mitigate against obtaining adequate cathodic protection . . . .

National Transportation Safety Board, Pipeline Accident Report: Colonial Pipeline Company Petroleum Products Pipeline Failures, Manassas and Locust Grove, Virginia March 6, 1980 10 (July 15, 1981). The NTSB also acknowledged that "[c]orrosion resulting from damaged coating on a carrier pipe inside its casing is, unfortunately, common in pipeline systems." Id. at 11.

**Q. Are there other problems with using a "double walled" design on the proposed pipeline?**

A. Yes. There are construction-related problems. It is really only feasible to construct cased pipe in relatively short stretches of straight pipe. You need to insert or pull the carrier pipe inside the casing with insulators designed to prevent the two pipes from touching. Once inserted, you cannot bend the two pipes in the way that would be required along most areas of the proposed route.

**Q. Some witnesses testified that this "double-wall" design was used by ARCO for the Colville River crossing at its Alpine exploration project. What is your reaction to that?**

A. I have several reactions. First, I am surprised that any pipeline engineer would have endorsed ARCO's approach to that project. For the reasons that I have already explained, I think that the pipe-within-a-pipe design that ARCO has apparently proposed to use will substantially increase the risk of a corrosion-related leak in the carrier pipeline. (As the portion of the ARCO document quoted by Mr. Batten acknowledges, only the exterior pipe will be cathodically protected.) If a leak of the interior carrier pipe occurred under the Colville River, there would be no good way to get the released oil out of the casing, and of course, the casing would be more

vulnerable to leaks than if ARCO had installed an ordinary single pipe to begin with. It will also be impossible to inspect the casing pipe with an internal line inspection device.

Second, the mere fact that ARCO has proposed to use this design does not prove anything. It is certainly not yet a demonstrated success. Indeed, Mr. Batten conceded in his deposition that he did not know if the ARCO design had been successful:

> Q. [D]o you know whether this pipeline is in operation yet?
> A. No, I do not know.
> Q. Do you know whether ARCO, in fact, built the crossing the way it's described here?
> A. No, I do not. I can only tell you what was in the comments.
> Q. So I take it you don't know whether this has – this approach has been successful for ARCO?
> A. No. I can only tell you that ARCO reported that it would be taking this approach . . . .

Deposition of Charles Batten at 126. (Portions of Mr. Batten's deposition are attached as Exhibit CWH-3.) It would be a mistake for EFSEC to require Olympic to use technology that has not been proven.

Finally, it would be impossible to replicate the design ARCO is using at the Colville River at most locations along the Cross Cascade Pipeline. ARCO's Colville River crossing covers a large open expanse. ARCO was able to insert the carrier pipe within the casing and then pull the combination under the Colville River without making any abrupt bends in the pipe. It is what is known as a free stress bend. In contrast, the river and stream crossings in the Cross Cascade Project are much narrower and could not be accomplished with a free stress bend. They would, therefore, pose the construction problems that I explained above.

**Q. Some witnesses testified that Olympic should use ½ -inch thick pipe in certain sensitive areas. Do you agree with this recommendation?**

A. No. In general, Olympic proposes to comply with regulatory standards and use 14-inch pipe with 0.281 inch thick walls and 12-inch pipe with 0.250 inch thick walls. For river crossings, Olympic will use 0.500 inch thick pipe and for stream crossings, Olympic will use pipe that is a

minimum 0.312 inches thick. The purpose of using thicker pipe in those locations is to further protect the pipe from external or internal loading conditions. The witnesses who have proposed using ½-inch thick pipe in other areas have not explained the purpose that they think would be served by the added thickness. I do not believe it would serve any purpose.

**Q. Kenneth Johnson (King County) testified that Olympic should cover the pipe with 40 mils of high density polyethylene and 1 inch of standard concrete in sensitive areas. Do you agree with that recommendation?**

A. No. The entire pipe will be coated with 40 mils of high density polyethylene. For trenched stream crossings, Olympic will also coat the pipe with 1 inch of standard concrete coating, but the purpose of that coating is to provide negative buoyancy and provide protection in the event of an unanticipated scour event. No purpose would be served by coating the pipeline with concrete in all "sensitive" areas.

**Q. James Miller (CFE) testified that 100% of welds be radiographically tested and subjected to an independent third-party review. Do you agree with this recommendation?**

A. Yes. Although federal regulations require that only 10% of welds be tested, Olympic proposes to inspect 100% of the welds radiographically, utilizing qualified, independent radiographers. (See Application chapter 2 at.2.3-11.)

**Q. Charles Batten (CCA) testified that Olympic should electronically test, repair and retest pipe and joint coating. Do you agree with this recommendation?**

A. Yes. That is Olympic's practice. Before the pipe is lowered into the ditch, an electronic "jeep" is run over the entire circumference of the pipe and any pinholes or thin spots in the coating are located, repaired and retested.

**Q. James Miller (CFE) testified that, for the entire western portion of the pipeline, Olympic should bury the pipeline with four foot depth of cover, utilizing preferred backfill materials and procedures. Do you agree with that recommendation?**

A. Yes. This is not required by regulations, but as indicated in Chapter 2 (page 2.3-9) of the Application, Olympic has proposed a minimum of 4 feet of cover and preferred backfill materials and procedures.

**Q. Some witnesses have recommended that Olympic construct "permanent diversionary berms," or "containment structures" along the pipeline. Do you agree with those recommendations?**

A. No. These witnesses have not explained precisely where or what they are proposing. In general, I do not believe it is advisable to change the drainage patterns of the natural landscape. Any such structures would fill up with storm water, serve no real purpose and have adverse environmental impacts.

**Q. Kenneth Johnson (King County) testified that Olympic should use "lined trenches" in high-value groundwater resource areas. Do you agree with that recommendation?**

A. No. I am not familiar with any cross country pipeline that utilizes "lined trenches" or other secondary containment devices. There is one isolated area over the Cross Valley Aquifer of potentially high permeability soil that is of concern. If we confirm its presence and cannot avoid it during construction, we will replace backfill at the bottom of the pipeline ditch with low permeability material.

**Q. James Miller (CFE) testified that "[a]n independent third-party pipeline inspector should be under contract to the State to audit construction activities, pipeline safety and environmental mitigation measures, and assure that laws, regulations and applicable**

**standards are followed. He should have stop-work authority." Does Olympic intend to do so?**

A. Yes, as indicated in the Application.

**Q. Mr. Miller also testified that all mainline block valves be "remotely operated, fire safe, and doubly redundant in operation and communications. Valves should be placed in vaults, and designed and constructed so as to remain operational, by hand or remotely, in the event of flooding. All mainline block valves should be tested hydrostatically once a year, and follow-up maintenance performed to assure tight closure. Initial and annual hydrostatic line testing should be audited on site. Line should be fitted to allow direct measurement of testing fluid temperature and pressure at all valves." Do you agree with those recommendations?**

A. For the most part, yes. As indicated in the Application, all mainline valves are designed for remote control and have pressure and temperature transmitters. The valves will meet API 6D specifications and will be of the "block and bleed" design. This will allow Olympic to test both the upstream and downstream seals to insure their integrity, and it will facilitate periodic static pressure testing of the mainline. Olympic intends to install all mainline valves above grade, surrounded by impervious soil and berms or dikes. In the event that we cannot install a valve above ground as planned, any underground valve will be placed within a vault.

**Q. John Mastandrea (CCA) testified that all above-ground portions of block valves have secondary containment. Does Olympic intend to do so?**

A. Olympic intends to use weld-end valves to minimize leaking, and to place the valves above ground to allow easy inspection and maintenance. Olympic will also provide containment under the block valves sites and place impervious soil on site with perimeter dikes or berms.

**Q. Some witnesses testified that Olympic should install more block valves along the proposed route. Charles Batten recommended block valves be placed every 10 miles. John**

**Mastandrea recommended that they be spaced such that the maximum spillage at any location would be no more than 100,000 gallons. Do you agree with these recommendations?**

A. No. I do not believe that block valves should be spaced according to any arbitrary criteria such as miles or volume of product in the pipe. Rather, valve locations should be determined based upon pipeline hydraulics, topography, and the location of sensitive resources. In selecting locations, Olympic must also consider the accessibility for regular maintenance, and the availability of power and communications necessary for remote control. Moreover, the decision about whether to install additional block valves requires a careful balancing of factors because more leaks occur at valve sites than on straight line pipe.

**Q. Kenneth Johnson (King County) testified that Olympic should install block valves on each side of major rivers and high resource value streams and wetlands. Dose Olympic intend to do this?**

A. Olympic has sited block valves on either side of major river crossings (outside the flood plains) and to protect unusually sensitive areas.

**Q. Randy Sandin (King County) testified that block valves should be placed on both sides of the Tolt River crossing, the Snoqualmie River crossing and one of the South Fork Snoqualmie River crossings. Do you agree with this recommendation?**

A. Yes, in part. Federal regulations require Olympic to place valves on either side of major river crossings, unless conditions justify otherwise. Such is the case between the south side of the Snoqualmie River and the north side of the South Fork Snoqualmie River. Those rivers are approximately 2 ½ miles apart, the trail is the only high ground, with wetlands and flood plain on either side, and there is no ready access by road for regular inspection and maintenance. Because we would prefer not to install valves in the middle of the trail or within a floodplain, we have proposed to protect both rivers with one set of remote controlled valves. Olympic plans to

place block valves on both sides of the Tolt River, outside the floodplain at the first accessible sites.

**Q. John Mastandrea (CCA) testified that Olympic should inspect block valves for proper operation every six months. Does Olympic intend to do so?**

A. Olympic plans to inspect their valves weekly and to perform maintenance as required. Olympic will check the valve operations regularly and certainly every six months as required by federal regulations.

**Q. Charles Batten testified that Olympic should "[d]esign, install, and monitor the external corrosion protection system to meet or exceed the National Association of Corrosion Engineers Standard RP 0169 requirements." Does Olympic intend to do so?**

A. Yes. Olympic intends to design, operate and maintain this pipeline in accordance with the latest applicable industry guidelines. (See Application chapter 2 at 2.3-12 and 2.9-6.)

**Q. William Roberds (Cross Valley) testified that Olympic should install localized cathodic protection in the area of the Cross Valley Aquifer. Does Olympic intend to do this?**

A. The entire pipeline will be protected from corrosion by an impressed current cathodic protection system. Olympic has been reviewing with Cross Valley personnel the possibility of conducting more frequent and detailed inspections of the cathodic protection system in the area near the aquifer.

**Q. John Mastandrea (CCA) testified that Olympic should install test points for the cathodic protect system at 10 foot intervals in some areas, and at both sides of all bridge, water and rail crossings. Do you agree with that recommendation?**

A. No. Olympic will install cathodic test stations as often as practical, including at road crossings, railroad crossings, river and stream crossing, with a maximum spacing of mile intervals in rural areas. I am not aware of any corrosion engineer that would recommend or install permanent test stations at 10 foot intervals. If an inspection is required or deemed appropriate at these intervals,

the corrosion engineer would conduct a continuous or close interval survey in the area. Installing permanent test stations is not necessary to conduct those tests.

**Q. Several witnesses recommended that Olympic conduct on-the-ground inspections by line walkers using hydrocarbon sensing probes. Do you agree with that recommendation?**

A. No. Olympic personnel will visit and inspect the pump stations daily and valve sites weekly. During these inspections, most of the populated areas will be driven through and monitored. Olympic operations and maintenance personnel will also view portions of the line during the ordinary course of their work. Beyond that, I am not aware of any pipeline company using line walkers with hydrocarbon sensing probes for ground monitoring on a cross country petroleum products pipeline. The normal industry practice is to conduct routine aerial inspections. From the air, experienced pilots can detect sheens or distressed vegetation that would be visible by walking the line. Indeed, in some instances pilots may be able to detect problems that would go unnoticed by someone at ground level.

Even if ground inspection were appropriate, however, I do not believe the routine use of hydrocarbon sensing probes would make sense. Refined petroleum products have a distinct odor, and they volatilize and disperse rapidly when exposed to air. That means that product released in an unconfined area would be unlikely to be detected by a hydrocarbon sensing probe, and any product that could be detected by a probe would likely be detected by one's ordinary sense of smell. If there were a reason to use a hydrocarbon probe, all Olympic personnel carry portable unit to use in these situations.

**Q. Several witnesses testified about Olympic's aerial inspection of the pipeline. James Miller recommended that an pipeline engineer accompany the inspecting pilot and that the inspections be videotaped. Elin Storey recommended that they be conducted by helicopter instead of fixed wing aircraft. Do you agree with these recommendations?**

A. No. Olympic intends to conduct weekly aerial inspections by fixed wing aircraft, weather permitting. These aerial inspections will allow Olympic to watch for potential encroachments on the right of way and other conditions that may damage the pipeline, as well as making Olympic aware of any sheens or discolored vegetation that might indicate that product has been released. I am not aware of any professional line flyer who is routinely accompanied by a second person. As a practical matter, a second person would not be particularly helpful because the pilot flies the plane in such a way that it maximizes his or her own view of the right of way, which means that the passenger's view would be limited. Moreover, these pilots usually fly from one utility right of way to another, without returning to the origin, which would make accommodating a passenger interested in only one right of way difficult. The use of video cameras during weekly flights is even more impractical. It would be difficult to maximize the view of both the pilot and the camera, and the plane would have to land every 25 minutes to change film. Videotaping might also delay reaction to a problem until the film were first processed and then viewed. Finally, Olympic prefers to use fixed wing aircraft rather than helicopters for its aerial inspection, as do most cross country pipeline companies. Fixed wing aircraft are more stable, less noisy, and have a longer cruising range.

**Q. John Mastandrea (CCA) testified that the aerial inspection should be conducted using forward-looking infrared (FLIR) technology. Do you agree with that recommendation?**

A. No. I am not familiar with any use of FLIR technology in connection with pipeline route surveys. The only successful application of this technology with which I am familiar is the Coast Guard's use of it in night tracking of spills from barges and ships offshore. In general, I understand that FLIR technology has met with little success in vegetated areas, and therefore, would be of limited use for cross country pipelines.

**Q. Several witnesses have recommended that Olympic conduct periodic internal inspections of the pipeline with so-called "smart pigs." Do you agree with that recommendation?**

A. Yes. Internal line inspections with high resolution magnetic flux and geometry pigs are the best way of evaluating the condition of the pipeline and detecting problems before they result in a release. Although not required by federal regulations, Olympic intends to conduct a baseline internal inspection shortly after bringing the pipeline into operation, and subsequent internal inspections at least every 5 years. (See Application chapter 2 at 2.9-6.)

**Q. Some witnesses emphasized that Olympic should use the internal inspection device developed by British Gas. Do you agree?**

A. No. Olympic will use a high resolution magnetic flux device. British Gas is only one of several venders offering internal inspection tools of comparable capabilities.

**Q. James Miller (CFE) testified that Olympic should conduct internal line inspections annually. Do you agree with that recommendation?**

A. No. There is no reason to believe that conducting internal inspections that frequently would be worthwhile. A principle reason to conduct internal inspection is to identify areas of the pipeline that are experiencing corrosion. In a typical refined product pipeline corrosion rates do not exceed a few mils per year, and at that rate, it would take many years for a corrosion-related failure to develop. Olympic intends to conduct internal line inspections at least once every five years, and that would be sufficient to detect the problem before a leak develops. Although Olympic generally intends to conduct internal inspections at least once every five years, Olympic has already committed in a stipulation with the Yakama Indian Nation to conduct a second inspection of the eastern half of the pipeline in each 5 year period, and Olympic will conduct more frequent inspections if there are indications that doing so would be prudent.

**Q. Some witnesses have recommended that Olympic conduct periodic hydrostatic tests. Do you agree with that recommendation?**

A. No, there is no reason to hydostatically test a new pipeline annually if it is properly hydrostatically tested prior to initial operation. Olympic will hydrotest its pipeline prior to operation at a minimum of 125% of maximum allowable operating pressure for a full 8-hours, which goes beyond federal regulatory requirements. After Olympic begins operations, the environmental consequences of repeated hydrotesting (including the consequences of obtaining the necessary volume of water and disposing of the contaminated water after the test) would outweigh any perceived benefits. Internal line inspection is a far superior inspection method once pipeline operations have begun.

**Q. Some witnesses have recommended conducting regular "shut-in" or static pressure tests. Does Olympic intend to conduct static tests?**

A. Yes. Olympic, like most pipeline companies, regularly performs static pressure tests during scheduled shut downs and whenever there is a question of line integrity. Olympic will conduct a full blown static test, shutting in all valves, allowing temperatures to equalize, re-pressuring short sections with large delta temperatures and corresponding pressures, on a quarterly basis. These tests may take a day or more to conduct, and we do not believe that it would be worthwhile to conduct them more frequently as a routine practice. Olympic will, however, conduct more limited static tests of the entire line on a monthly basis.

**Q. Several witnesses testified about the remote pipeline leak detection system and the SCADA system. Can you describe the systems that Olympic uses?**

A. Yes. Ron Brentson from Olympic is addressing these systems in more detail in his testimony, but I can describe them generally. The SCADA system is just that: a supervisory control and data acquisition system. It is the basic computer system that allows controllers in Renton to operate the pipeline remotely. The system collects and reports back data from thousands of

different points on the system, keeping the controllers informed of flow rates, pressures, temperatures and numerous other parameters along the pipeline. The system uses the most accurate metering system available, turbine meters with stationary prover loop, pressure and temperature devices at each intermediate station and block valve site, and on-line densitometers. The Pipeline Leak Detection System (PLDS) is a dynamic computer model that simulates the performance of the pipeline and compares actual values measured by the SCADA system with modeled values, declaring an alarm when those values differ beyond pre-set limits.

**Q. Charles Batten (CCA) testified that Olympic's leak detection system should be "capable of detecting a ½ percent of maximum design product flow release." How does Olympic's system compare to this recommendation?**

A. Olympic's system is based on pipeline modeling program developed by Modisette & Associates. This type program is considered top-of-the-line in the liquid, pipeline industry, per API Spec. 1130. Olympic is continually improving this system with hardware and software upgrades in order to provide the fastest possible response to the smallest release possible, with reliability and repeatability. In fact, Olympic has conducted a formal test in which the system proved capable of detecting a release of 0.5% percent of flow within 15 minutes. Under many operating conditions, the current leak model and the new lines model, with more frequent instrumentation, can detect variances as small as 0.1% of flow.

**Q. John Mastandrea (CCA) recommended enhancing the capability of the computerized leak detection system by installing temperature, pressure, flow and density test ports every few miles along the pipeline route. Where will test ports be located on the Cross Cascade Pipeline?**

A. Our leak detection system will be enhanced by the use of pressure and temperature transmitters at every valve location. Accurate volumetric measurements are only required when product is introduced to the line (origin) and where it is removed (terminus).

**Q. Mr. Mastandrea also recommended that Olympic conduct periodic tests of the leak detection system. How will Olympic test the system?**

A. Olympic has conducted demonstration tests on the existing system, particularly to test the portion of the computer program that estimates line location of anomaly, and will do the same on the new line. Once the model is up and running, however, it is "tested" continuously because it is continually predicting line conditions that are compared to measured conditions. Any variances outside the norm must be explained and remedied. Olympic technicians regularly review the model's performance to insure proper operation.

**Q. Charles Batten (CCA) testified that Olympic should "[s]pecify the reliability and performance standards for the control system communication system and design the system to automatically shut down in the event of a control system communication failure." Do you agree?**

A. Olympic's historical performance standard for their SCADA system exceeds 99.97%, and we have every intention of maintaining that performance standard on the new pipeline. In the event of a communication failure, it is Olympic's practice to immediately call out and man facilities at active stations. Any major communication failure would result in shutting the effected system down until communication is restored.

**Q. John Mastandrea (CCA) testified that Olympic should use a clamp-on meter leak detection systems. Do you agree with this recommendation?**

A. No. Clamp on meters do not provide the accuracy, linearity and repeatability of the more expensive turbine meters and stationary prover loops that Olympic intends to use.

**Q. James Miller (CFE) testified that Olympic should install "acoustic emission leak detection systems . . . to protect a sole source aquifer." Do you agree with that recommendation?**

A. No. Although acoustic sensors may have applications, such as short gas pipelines, they are certainly not as accurate and effective in leak detection as the combination of turbine meters,

stationary prover loop, pressure and temperature transmitters distributed along the pipeline, all coupled with a modern computer based SCADA system and leak model program.

**Q. Some witnesses recommended that Olympic install hydrocarbon sensing cables, tracer type hydrocarbon proves, or vapor monitoring piping to detect leaks along the pipeline. Do you agree with those recommendations?**

A. No. I am not familiar with any cross country pipeline that uses these technologies for extended distances. Various types of hydrocarbon sensing cables have been tested over the years, but none have proven effective for cross country pipelines. The cables can only be used for short distances, and they deteriorate readily, which sets off false alarms and requires environmentally disruptive excavation for cable maintenance and replacement. See U.S. Department of Transportation, Volpe National Transportation Systems Center, Remote Control Spill Reduction Technology 16 (Sept. 29, 1995) ("Cables cannot be reused after it has absorbed a hydrocarbon and issued an alarm; it must be excavated and replaced. In addition, these systems are unable to distinguished between the sources of the liquid, as they detect the liquid after it is released.") Hydrocarbon detectors or tracer type probes are similarly used in confined spaces, such as pump buildings. Olympic does plan to utilize detectors in our new stations on the pipeline. Olympic has always kept its eye out for new effective technology and will continue to monitor the development of these technologies in the future.

**Q. John Mastandrea (CCA) testified that Olympic should install groundwater monitoring wells along the length of the pipeline, locate oil spill detectors above all underwater sections of the pipeline, and tow hydrocarbon probes over the length of underwater sections. Do you agree with these recommendations?**

A. No. I have not heard of any pipeline company doing these things. Certainly, if there were any question concerning the integrity of Olympics pipeline, we would conduct whatever tests were necessary including testing existing water wells or drilling additional test holes.

**Q. James Miller (CFE) testified that Olympic should install a vapor sensing alarm system, and backup ventilation system in the Snoqualmie Tunnel. Do you agree?**

A. No. With prevailing winds east to west through the tunnel, it is extremely unlikely that vapors could accumulate to the point of being detected by a hydrocarbon sensor. A backup ventilation system is unnecessary for the same reason.

**Q. Some witnesses have expressed concern about responding to a spill in the Snoqualmie Tunnel. Are their concerns justified?**

A. No. The probability of a leak or spill occurring at any particular point along the pipeline route is extremely remote. For several reasons, it is particularly unlikely that a leak or spill would occur in the tunnel. In Olympic's experience, leaks or spills have been more common at facilities or valve sites than in lengths of straight line pipe, and there are no facilities or valves within the tunnel. The most frequent causes of leaks or ruptures along stretches of line pipe are third-party damage and corrosion, neither of which is likely within the tunnel. Third-party damage is extremely unlikely because excavation activities do not typically occur in the tunnel. The pipeline will be protected from other possible third-party damage by being placed underground and covered with a 2" layer of concrete as well as the ordinary backfill material. The entire length of pipe within the tunnel will be effectively protected from corrosion by the cathodic protection system, and will be monitored by internal line inspections to ensure that any corrosion would be detected in time to be repaired. Because the tunnel is located at a high point on the line, operating pressures are at their lowest levels, which makes any rupture even less likely to occur. If, despite these precautions, a leak or spill occurred, Olympic would respond immediately, as it would with any other leak or spill. Again, because the tunnel occurs at a high point on the line, very little product would drain out once the pumps were shut down.

**Q. Finally, Charles. Batten (CCA) testified that that Olympic "implement an internal annual safety audit procedure capable of identifying conditions, procedures, and operations not in**

**compliance with standards, regulations, and application approval conditions and implement a procedure for prompt correction of identified deficient conditions." Does Olympic have that sort of safety audit procedure?**

A. Yes. Olympic undertakes annual review of all its safety, operating, maintenance and emergency procedures, to insure compliance with rules, regulations and standards. Olympic also modifies and updates procedures, manuals and training programs to reflect changes in the physical system and to take advantage of upgrades in technology and changes in industry practices. In addition, Olympic is inspected regularly by the Washington Utilities and Transportation Commission and the Department of Transportation. Olympic's owner companies also conduct regular audits.

**Pipeline Construction**

**Q. Several witnesses submitted testimony concerning the construction of the proposed pipeline. Can you describe the construction process generally?**

A. A cross country pipeline is ordinarily built with several construction "spreads." A typical spread ordinarily consists of several distinct crews that move along the right-of-way, performing their work, much like a factory production line. Different work crews handle different construction tasks: clearing and grading, ditching, hauling and stringing, welding, radiography, joint coating and inspection, bending and laying, backfilling, and cleanup. There are variations in the size and number of work crews depending upon the right-of-way restrictions, topography, and vegetation. In addition to the regular spread, there are additional crews handling special work such as road crossings, stream crossings, tie-ins, hydrostatic testing and block valve installation. Pump station and terminal construction would normally be handled by separate contractors with work broken down by the various crafts, including carpenters, welders, pipefitters, operators and electricians. Of course, shadowing every contractor crew is a separate crew of company and third-party inspectors to ensure adherence to specifications, codes, safety rules, environmental regulations and permitting requirements.

**Q. Charles Batten testified that Olympic should "[e]xtend the right-of-way width to be at least 50 feet to provide adequate space for future pipe repairs or modifications and to prevent future damage to adjacent properties." Do you agree with this recommendation?**

A. No, while it may be convenient to have a 50 foot maintenance ROW, it is not necessary.

**Q. Ronn Schuttie and David Wolfer provided testimony on behalf of the Department of Natural Resources concerning road construction and maintenance in forest lands. In general, what is your reaction to that testimony?**

A. Both witnesses express broad concerns without being site-specific. In general, I agree with Mr. Wolfer's conclusion that site-specific issues could and should be addressed "by appropriate construction stipulations." Most of the concerns expressed by Mr. Schuttie and Mr. Wolfer relate to impacts that might result from pipeline construction if Olympic did not adhere to the procedures spelled out in the Application and the requirements of the Washington Forest Practices regulations. Because Olympic does intend to adhere to the Application procedures and comply with Forest Practice regulations, the concerns are not warranted.

**Q. Mr. Schuttie testified that construction along forest roads must involve strategies to control water movement that maintain natural drainage patterns. Does Olympic intend to employ such strategies?**

A. Yes. As detailed in the Application, construction practices will be followed to ensure that natural drainage patterns are maintained. Olympic will monitor the effectiveness of these measures through pros-construction inspections with EFSEC oversight.

**Q. Mr. Wolfer testified that the presence of a pipeline may impact DNR's ability to add roads through DNR lands in the future. Do you agree?**

A. No. The location of Olympic's pipeline on DNR land should not impact DNR's ability to build new roads in the future because Olympic's easement agreements typically include appropriate relocation and readjustment provisions

**Q. Mr. Wolfer testified that the presence of the pipeline will require additional road maintenance work by DNR staff. Do you agree?**

A. No. Any damage to DNR roads resulting from Olympic's construction activities will be repaired to DNR's satisfaction at Olympic's expense. There should be little or no Olympic traffic on DNR roads following construction, but to the extent that any future repair work is require as a result of Olympic activities, Olympic will reimburse DNR for the repair costs.

**Q. Mr. Wolfer testified that pipeline construction may damage DNR roads. Do you agree?**

A. No. As mentioned above, roads will be repaired to the satisfaction of DNR's staff and will be monitored through post-construction inspections to ensure the adequacy of the repair techniques.

**Q. Mr. Wolfer testified that pipeline construction on DNR Roads may cause problem for the agency's timber sale program? Do you agree?**

A. No. Olympic will coordinate pipeline construction with DNR staff and timber purchasers to ensure that there is no disruption in timber harvesting practices.

**Q. Timothy Goodman (DNR) expressed concern about the possibility of spills of hydraulic fluids, fuel and lubricating oils during construction. What measures will Olympic take to prevent such spills?**

A. As outlined in our Application, Olympic will require all contractors to adhere to a strict equipment inspection program prior to working on the right-of-way. This includes daily inspection, with proper documentation. In addition, there are certain restricted activities along the right-of-way, such as set back distances from streams and wetlands for refueling or maintenance. Any accidents will be cleaned up immediately with contaminated absorbents and soil removed to an approved disposal site.

**Q. Mark Gray provided testimony on behalf of the Department of Natural Resources concerning forest fire risks during construction. What measures will Olympic take during construction to prevent forest fires?**

A. Safety to the public and the environment, including fire safety, is the number one priority of Olympic and its contractors. Contractor safety programs and records are reviewed prior to qualifying for Olympic work. Safety meetings are conducted prior to and during construction. Olympic and the general contractor(s) will have full-time, safety compliance inspectors on site for the duration of construction activities. Fire safety practices will include full-time fire watch personnel with adequate fire extinguishers at the ready during all hot work activity, welding and grinding. All construction vehicles will be inspected to ensure proper installation and operation of exhaust equipment.

**Q. Mr. Gray recommended that Olympic be required to adhere to Washington's Industrial Fire Precaution Level requirements listed in WAC 332-24-301 and the Spark Emitting Equipment Requirements stated in WAC 332-24-405. Does Olympic intend to adhere to those requirements?**

A. As a general matter, Olympic intends to adhere to applicable codes and requirements, and to closely coordinate construction activities in forested areas with DNR, USFS and private landowners, such as Weyerhaeuser. Whether or not all aspects of the regulations cited are applicable to pipeline construction will require review and discussion with DNR staff.

**Q. Mr. Gray also recommended that Olympic should be prohibited from open burning of vegetation or any other material associated with construction or operation of the pipeline. Does Olympic have any objection to such a prohibition?**

A. No. Olympic has already stipulated with WDOE to prohibit the open burning of vegetation or any other material associated with construction or operation of the pipeline.

**Q. In light of the fire prevention practices Olympic intends to follow, do you believe there is a significant fire risk during construction of the proposed pipeline?**

A. No. Between the safety and fire prevention program and the full-time monitoring by both Olympic and contractor safety compliance personnel, fire risk during construction should be next to nil.

**Q. Tim Schmidt and James Thompson prepared testimony on behalf of the Washington State Parks and Recreation Commission concerning construction issues at the Snoqualmie Tunnel. What is your general reaction to this testimony?**

A. Most of their testimony reviews information found in our EFSEC Application and the easement application we submitted to State Parks, and presents potential mitigation measures and requirements that we have already been discussing with Parks staff.

**Q. In his testimony Mr. Thompson describes Olympic's construction approach in the Snoqualmie Tunnel? Is his understanding accurate?**

A. Yes, for the most part.

**Q. Mr. Thompson testified that construction activities would damage the tunnel. Are his concerns warranted?**

A. He described several potential impacts related to construction of the pipeline. Olympic has considered each of these potential impacts and has addressed them, either by construction techniques, timing, or monitoring activities. Olympic will restore the tunnel in accordance with Parks' requirements and will evaluate the restoration for effectiveness through post-construction inspections and monitoring.

**Q. In order to prevent damage to the tunnel, Mr. Thompson recommends that blasting be prohibited or severely limited. Do you agree with this recommendation?**

A. Yes. As indicated in the Application, Olympic intends to use rock trenching equipment to cut the ditch through the tunnel. Any blasting required near the west end of the tunnel will be severely limited to small shaped charges designed merely to fracture the rock and allow for further excavation with conventional trenching equipment.

**Q. Mr. Thompson testified that a monitoring program be developed for construction in the Tunnel. Do you agree with this recommendation?**

A. Yes. We would expect to work with Parks staff to develop a detailed inspection program covering construction and post-construction periods.

**Q. Mr. Thompson testified that construction might create drainage problems in the tunnel. Are his concerns warranted?**

A. No. The backfill plans outlined in our Application should prevent any change to the existing drainage conditions within the tunnel. In fact, the drainage should be improved by Olympic's repair or replacement of damaged scuppers and deteriorated wooden covers found in the tunnel..

**Q. Mr. Thompson testified that the AT&T and WorldCom fibre optics cables located in the tunnel could be damaged by pipeline construction. Are his concerns warranted?**

A. No. Olympic is aware of the presence of communications cables within the trail system. Olympic has meet with staff from both AT&T and WorldCom as well as the Parks staff, to review drawings of cable locations in order to propose a location for the pipeline in the tunnel. Final review and location, as well as construction plans, will be agreed upon prior to construction. The location of the cables will be marked prior to construction to ensure that they are not damaged during construction. In response to Mr. Thompson's concern about the cathodic protection system interfering with the communication cables, an interference survey will be

conducted by corrosion engineers following construction, and any interference will be eliminated by use of appropriate bond wires. This is common practice for underground utilities or pipelines that share common corridors or right-of-way.

**Q. Mr. Thompson testified about potential hazards to construction personnel in the tunnel. What is your response to that testimony?**

A. Safety of contractor and company personnel is of utmost concern to Olympic. Olympic will conduct a thorough review of tunnel conditions just prior to construction and will monitor tunnel conditions throughout construction, and Olympic will take appropriate precautions to ensure the safety of construction personnel.

**Q. Mr. Thompson recommends that Olympic prepare a detailed construction plan for the tunnel and complete a thorough evaluation of its structural integrity. Do you agree with this recommendation?**

A. Prior to construction, yes. At the request of State Parks, Olympic investigated construction techniques and conducted test digs throughout the tunnel prior to proposing the underground installation. Further details of construction will not be known until permits are approved, a contractor is selected and final information is known concerning construction windows and construction starting date. When the final construction plans are completed, Olympic will provide them to State Parks staff to review.

**Q. Mr. Schmidt testified that Olympic's time frame for construction of the pipeline is unreasonable. Do you agree?**

A. Olympic may have been overly optimistic in construction time estimates, but I would like to think not. Olympic will generate a more detailed and accurate schedule once the start and finish timing is finalized and the number of work crews is determined. Olympic shares State Parks' concerns that construction timing be coordinated to minimize impact to park users. For example,

Olympic has planned to construct through the tunnel during the fourth quarter when the tunnel is ordinarily closed to the general public.

**Terminal and Pump Station Design**

**Q. Mr. Batten recommends that Olympic "[s]pecify the design, performance, and maintenance standards to which all terminal facilities will comply." Do you agree with this recommendation?**

A. As outlined in our Application, Chapter 1, pages 1.6-1 to 1.6-5, the terminal at Kittitas will be designed, operated and maintained in accordance with all applicable federal, state and local rules and regulations and the latest industry codes and guidelines. Detail design and operating, maintenance and emergency response manuals will be submitted to EFSEC for review and approval.

**Q. John Mastandrea (CCA) testified that pump stations should have secondary containment and double wall piping. Do you agree with that recommendation?**

A. Olympic station design includes on site containment of any spilled product through the use of sumps and berms or dikes. Pumps will be enclosed in buildings with hydrocarbon sensors with remote indications. It is absurd to compare any petroleum piping pump station with 12-14 inch steel piping, valves weighing 3000 lbs., with a gasoline station that employs 2-3 inch plastic pipe, operating at 30-40 psi.

**Pipeline Decommissioning**

**Q. What is Olympic's plan for decommissioning the pipeline?**

A. Decommissioning and site restoration are addressed in Part 7.3 of the Application. Olympic will develop a Final Restoration Plan near the end of the useful life of the project. The plan will comply with applicable regulatory requirements and be subject to EFSEC's approval. In general, when the pipeline ceases to be used, it will be abandoned in place, unless easement agreements specify to the contrary. The pipeline will be evacuated, dried and filled with inert material.

Olympic will stop maintaining the thirty foot corridor and vegetation will be allowed to grow naturally.

**Q. James Miller testified that abandoning the pipeline could create a potential "time bomb" of petroleum vapors and should, therefore, be removed from the ground. Do you agree?**

A. No. As explained above, the pipe will be thoroughly evacuated of petroleum product and dried. This will be accomplished with the use of multiple cleaning pigs, water and nitrogen.

DATED: March 24, 1999

_____
Claude Harshbarger